

ISM 672: Application Design and Programming

Fall 2019



Instructor Information

Instructor:	Rahul Singh, PhD
E-Mail:	rahul@uncg.edu Email is my preferred method of communication.
Office:	481, Bryan Building.
Course Meeting Time:	Thursday 7 pm to 10 pm.
Office Hours:	Thursday 3pm to 6:00 pm. Other times by Appointment.

Catalog Description

Apply fundamental programming concepts to design and implement applications for the Web. This course provides students the necessary foundations for developing Web Applications and evaluating entrepreneurial opportunities.

Student Learning Outcomes

Upon successful completion of this course students will be able to:

1. Evaluate and Design the architecture of contemporary Business Applications
2. Analyze programming principles to develop applications.
3. Apply programming concepts to develop applications.
4. Implement programming techniques to develop applications.
5. Test technologies needed for developing applications.
6. Evaluate entrepreneurial opportunities related to using Web applications and technologies.
7. Synthesize managerial and entrepreneurial issues related to using applications in a new or existing business.

Required Materials:

Books

I do not require you to buy any textbooks for the course. The following two books available for you to download in the library as eBooks. We will use these as text and reference materials for the course. I encourage you to download and review these books. I expect that we will completely cover the first book and make good headway into the second.

(Note: If this is your first time using Visual Studio or indeed your first time programming, reviewing the first few chapters of the second book that introduces you to the VS environment will help you prepare for the course.)

- i. Perkins, B., Hammer, J., & Reid, J. (2018). Beginning C# 7 programming with visual studio 2017. Indianapolis, IN: John Wiley and Sons. (2018). (Available at: <https://uncg.on.worldcat.org/oclc/1029545729>)
- ii. Johnson, B., (2018). Professional visual studio 2017. Indianapolis, IN: Wrox, a Wiley Brand. (2018)
(Available at: <https://uncg.on.worldcat.org/oclc/1112100458>)

In addition, there are multiple other good reference books with different strengths in different aspects of our course. Some books are strong on Visual Studio and weak on the language, others are good in web application but weak on desktop applications. Among them the following may be of interest:

- i. Taher, R (2019). Hand-on Object-Oriented Programming with C# by Packt Publishing. Available at: (<https://uncg.on.worldcat.org/oclc/1097572727>)
- ii. Sharp, J. (2018). Microsoft visual c# step by step (Ninth ed., Step-by-step) Pearson Education. (2018). Available at: <https://uncg.on.worldcat.org/oclc/1045428992>
- iii. Troelsen, A. (2017). Pro c# 7 : With .net and .net core (Eighth ed.) Apress. (2017).
Available at: (<https://uncg.on.worldcat.org/oclc/1037100055>)

I encourage you to search and share your findings as you go through the course and help everyone benefit from your perspectives.

Canvas Learning Management System:

UNCG Canvas is available at <https://canvas.uncg.edu>. Course materials, announcements and updates will be posted on Canvas regularly. Please check canvas daily for announcements, discussions and materials.

IDE (Integrated Development Environment)

We will use Visual Studio 2019. While VS 2017 is available, our course is geared towards VS 2019 and there is not a whole lot of difference between them. You are welcome to use VS 2017 if you wish.

All ISSCM students have access to Visual Studio Enterprise through UNCG's Microsoft Academic Alliance program here: <https://azureforeducation.microsoft.com/devtools>.

You will need to log in with your UNCG user name and password. You can then download the VS 2019 Enterprise (which comes with SQL Server Local DB) and install

it on your machine. We will use both of these extensively throughout the course. Detailed information on installation of VS 2019 is provided in canvas.

Additional Resources

In learning to develop applications, one uses a book as a reference more than as a traditional text. There are multiple resources that you should become aware of and familiar with including:

1. Microsoft Documentation @ <https://visualstudio.microsoft.com/vs/>
2. C# guide available at: <https://docs.microsoft.com/en-us/dotnet/csharp/>
3. Entity Framework Tutorial: <https://www.entityframeworktutorial.net/>
4. Channel 9 online videos: <https://channel9.msdn.com/>
5. Stack Overflow: <https://stackoverflow.com/>

These will give you examples, complete code as well as documentation and step-by-step guidance on how to build and *play with* applications.

Programming is like solving puzzles. The same person may take 2 hours or 20 hours to solve the same problem. My advice to you is – *don't get stuck and don't get frustrated*. I am here to help you learn and master the material. In addition, multiple resources are available for you to view, learn from and adapt into your own solution. We don't need to re-invent the wheel – we simply need to see how other wheels work in other vehicles and learn from them enough to adapt them into your own. When (not if) you get stuck, please ask. Ask questions and learn from the multitude of resources available. They will never have the exact solution you are looking for, but they will have a solution that you can adapt.

It is also a process of discovery learning – where you learn by seeing and doing so you can discover the solution to your own problem. Many times, one begins to feel that the problem is impossible – it is not. Non-trivial problems are challenging – they require your diligence and creativity.

There is much joy in solving problems. Think about when you were learning to ride a bicycle or learning to swim – they seemed impossible and frustrated you till things began to fit together and you felt great that you accomplished the seemingly impossible task – application development is like that. It seems impossible till you get it and then it's a lot of fun – please have fun and learn.

Evaluation and Grading

Assignments:

Programming and application development assignments constitute a significant aspect of your skill development in this course. Students are required to complete each assignment.

All assignments will be due at 11:59 pm on the assigned due date. Assignments submitted after their due dates may be accepted with penalty based on valid reasons and documented cause, following discussion with the instructor. Materials in subsequent assignments often build on previous ones. Delayed submission, therefore, have a carry-over effect. Please make every possible effort to stay on time with your assignments.

Participation

Students are expected to regularly discuss their progress in the course and participate in discussions using WebEx and the topic/assignment specific discussion boards on canvas.

Exams

We will have a mid-term and a final exam. We will go over more information about the exams as the semester progresses.

Grades

Course grades will be based on the following:

Assignments	35 %
Class Participation	5 %
Midterm Exam	25 %
Final Exam	35 %
Total	100

The following grading scale will be applied to calculate your final letter grade based on the total grades you earn.

A	A-	B+	B	B-	C+	C	F
93-100%	90-92%	87-89%	83-86%	80-82%	77-79%	70-76%	< 70%

Topics and Tentative Schedule

This schedule is tentative. Modification and adjustment may be required during the semester. You will be notified on any changes on canvas. More details will be provided on specific due dates and times on canvas.

Week (Date – Thursday)	Topic	Deliverables (Due Date)
Week 1: 8/22	Orientation and Introduction Understanding the architecture of applications.	
Week 2: 8/29	Building your first Desktop Application Programming Fundamentals.	
Week 3: 09/05	Object Oriented Principles, Applications and Architecture.	
Week 4: 9/12	Digging Deeper into data driven applications.	Assignment 1
Week 5: 9/19	Building Data-Driven Desktop applications (continued). Entity Framework, MVC and .NET	
Week 6: 9/26	Building Data-Driven Desktop applications (continued). Create, Read Update and Delete (CRUD) with LINQ	
Week 7: 10/03	Building Data-Driven Desktop applications (continued). Putting it together into an application	
Week 8: 10/10	Assignment Midterm Exam	Assignment 2
Week 9: 10/17	ASP.NET and Web-Applications with MVC.	
Week 10: 10/24	ASP.NET and Web-Applications (continued). MVC and LINQ.	
Week 11: 10/31	ASP.NET and Web-Applications (continued). Controllers, Scaffolding CRUD with LINQ.	Assignment 3
Week 12: 11/07	ASP.NET and Web-Applications (continued). Managing Display with CSS. Putting it together.	
Week 13: 11/14	Mobile Platform Applications with Xamrin.	
Week 14: 11/21	Mobile Platform Applications – Xamrin and MVVM.	Assignment 4
Week 15: 11/29	Thanksgiving Holiday	No class.
Dec 05	Reading Day	No class.
December 5	Final Exam (more details will be provided on Canvas).	https://reg.uncg.edu/wp-content/uploads/FA-19-Exam-Schedule.pdf

Additional Information

Attendance Policy:

ISM672 will meet on Thursday evenings from 7 to 10 pm beginning the week of August 19. It is the student's responsibility to attend class (face to face and/or online) and to participate in class discussions. It is the student's responsibility to stay on track with readings and assignments to be successful in the course.

Canvas:

Check your Canvas course regularly. Email updates and new information is added to Canvas on a regular basis. You will be responsible for any information or announcements provided to you through email and for any updates on Canvas.

e-Mail:

- Always include a subject line.
- Remember without facial expressions some comments may not be interpreted accurately. Take care to word your emails. Use of emoticons might be helpful in some cases.
- Use standard fonts.
- Do not send large attachments without permission.
- Special formatting such as centering, audio messages, tables, html, etc. should be avoided unless necessary to complete an assignment or other communication.
- Respect the privacy of other class members

Netiquette:

The same guidelines that apply to traditional classes should be observed in the virtual classroom environment. Please use proper netiquette when interacting with class members and the professor.

Policy on Server Unavailability or Other Technical Difficulties:

The university is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows.

What you need to take this course:

1. Textbooks, Visual Studio with SQL Server .
2. You must have access to a computer that connects to the Internet. The course materials are only accessible online by logging in to canvas.uncg.edu - your student identification number is required. If you do not own a computer, the computer labs on campus will be open during this semester.
3. You must have a working e-mail account. Your first assignment will be to update your e-mail address on the course Web site. Instructions are online at canvas.uncg.edu - you must log in to see the course materials.
4. Because of e-mail viruses, you must use the subject ISM 672 and your full name typed in the message, or the e-mail may be ignored.
5. If you have questions, please do not respond to a Canvas Announcement, rather send me

- a direct email.
6. You must check your e-mail account regularly throughout the semester. Official announcements will be made by e-mail, and on the course Web site at canvas.uncg.edu.
 7. You are responsible for saving all assignments correctly, so you can turn them in electronically. You should be comfortable using word processing software, programming software and have reasonable keyboarding skills. No assignments will be accepted in handwritten form.
 8. Supplies: Although you will be publishing (uploading) your assignments, it's a good idea to keep copies of everything.

Academic Integrity Policies:

Students in the Bryan School must conform to all existing principles found in UNCG's Academic Integrity Policy and the Student Code of Conduct. Further details may be found at the following site: <http://sa.uncg.edu/handbook/>

Expectations of Faculty and Students in the Bryan School:

Students should read the Guidelines for Faculty and Students presented on the web pages found at: http://bryan.uncg.edu/wp-content/uploads/2012/08/faculty_student_guidelines.pdf

A note about learning:

Students learn best in quite different ways. One of the advantages of the online format of the course is that it allows students to approach the course in ways that suit their personal styles and preferences. In classrooms, instructors are inclined to teach either as they themselves were taught, or as they think "the average student" prefers. Online, all of the instructor-presented class material is laid out at once, and students can do with it whatever they prefer in order to learn in as personal and unique a fashion as possible.

To understand how you might learn best and how you might approach the course, it's suggested that you complete a learning style inventory, use the information given to figure and interpret your score, and plan your learning strategy accordingly. Another couple of online tools of this sort are the Keirsey Temperament Questionnaire (<http://www.keirsey.com/sorter/register.aspx>) and the Keirsey Character Questionnaire (<http://www.keirsey.com/>).

This course by design specifically accommodates different learning styles by involving a variety of components, including text, video clips, self-check quizzes, reference lists, online discussion, blogs and wikis. Since you are probably used to learning more or less as prescribed or required by a classroom teacher and are not used to designing your own learning strategy, it might take a little time to do that and to settle into a comfortable routine. I think you'll find that as you figure out on your own (and with the help of the online questionnaires mentioned) how to learn the material, everything will fall into place. Online learning, you will find, is quite different than classroom learning. It requires different attitudes, responsibilities, and communication skills.